



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,598	09/08/2003	Henry W. Babel	A-1955	1924
33197	7590	04/19/2006	EXAMINER	
STOUT, UXA, BUYAN & MULLINS LLP			WYSZOMIERSKI, GEORGE P	
4 VENTURE, SUITE 300				
IRVINE, CA 92618			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/658,598	BABEL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	George P. Wyszomierski	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 1/27/06 (Appeal Brief).
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-9 and 11-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-9 and 11-16 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                     | Paper No(s)/Mail Date. _____ .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____ .                                  |

1. Applicant filed a Brief on Appeal on January 27, 2006. On March 9, 2006, the examiner received a complete translation of the JP 2001-1059 document which was used to reject the instant claims. In lieu of an Examiner's Answer, the following new Office Action is being issued, which both refers to the translation of JP '059 and includes a new ground of rejection.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-8 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-001059, in view of Shrayer et al. (U.S. Patent 6,199,419).

The JP '059 reference discloses friction stir welding of several aluminum sheets (denoted as "friction churning junction" in the '059 translation) to form a flat plate, followed by a step of pressing or drawing to produce a parabolic shaped material. The latter step may include a form of spinning; see paragraph [0017] of the translation of JP '059. The '059 reference does not specify the various sub-steps of the "spin forming" step as recited in claim 1, does not disclose the dimensions as recited in claims 4, 5, 11 and 12, and does not disclose annealing prior to spin forming as required by claims 6, 8, and 13-15. However,

a) The Shrayer patent indicates that it was known in the art, at the time of the invention, to form dome-shaped articles from a flat blank by spin forming, and further discloses that spin forming includes the steps recited in claim 1 as amended. Note particularly Shrayer column 6, lines 1-20.

b) With respect to the dimensions, the processes as disclosed in the prior art would be amenable to being performed upon material of any desired dimensions, limited only by the capabilities of the apparatus being used in a given process. Clearly one of ordinary skill in the art would have easily been able to coordinate the proper tools and materials necessary to perform the prior art processes upon objects having the presently claimed dimensions. Further, it has been held that for a claim to be considered patentable based upon a dimension, Applicant must show that the dimension is critical; see *In re Woodruff* (16 USPQ 2d 1936, Fed.Cir. 1990).

c) With respect to annealing, Shrayer claim 6 indicates that it was well-known in the art, at the time of the invention, to anneal aluminum alloy blanks prior to spinning, and Applicant's own specification page 3, line 25 admits that "Current practice is to spin in the annealed temper." Thus, no patentable distinction is seen between the processes of claims 6, 8, and 13-15 and that which is generally known (and admitted by Applicant to be known) in the art.

Consequently, the combined disclosures of JP '059 and Shrayer et al. would have taught the presently claimed invention to one of ordinary skill in the art.

4. Claims 9 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-1059 in view of Shrayer et al., and further in view of either Ruhlman (U.S. patent 5,305,505) or Nakamura et al. (U.S. patent 6,722,285).

The JP '059 and Shrayer references, discussed supra, do not disclose annealing of a material prior to friction stir welding. However, i) it is noted that the instant claims do not positively recite an annealing step, i.e. the claims merely state that a material is welded in an annealed temper or condition, and ii) Both Ruhlman column 3, lines 12-54 and Nakamura column 4, lines 1-41 indicate that it was known in the art, at the time of the invention, to subject material that is in an annealed condition to friction welding, i.e. in order to achieve a desired

degree of hardness in one or more individual pieces of such material. In the case of the Nakamura patent, aluminum alloys are processed in this manner.

Thus, the combined disclosures of JP '059 and Shrayer et al., together with that of either Ruhlman or Nakamura et al. would have taught the process as presently claimed to one of ordinary skill in the art.

5. While this application is not being presented to the Board of Appeals at this time, the examiner would like to comment on several points raise by Applicant in the Appeal Brief filed January 27, 2006. Applicant relies on statements in the specification regarding what Applicant believes to have been the state of the art at the time of the invention. Specifically, Applicant states on page 3 of the specification that a friction stir welding process is being used for joining "fully heat-treated" aluminum alloys, but has not been considered for creating a joint in "annealed" aluminum. Applicant also states that current practice is to spin in the annealed temper.

Applicant then takes the first part of the above statement and contends that the materials that are friction stir welded in JP '059 must be fully heat treated, presumably because based on the above statement, those materials would not be considered candidates for friction stir welding if they were not "fully heat treated". However, it is noted that the "059 reference does not define what, if any, heat treatments had been given to the materials prior to friction stir welding. It is quite a leap of logic to assume that because Applicants were not aware of friction stir welding of anything other than "fully heat treated" materials, then no such process could have existed. The examiner is not questioning Applicant's veracity or sincerity in making these statements, but merely

pointing out that Applicant can only state that which he/she is aware of, and this may or may not include or exclude what other practitioners in the art are aware of.

Second, what is the definition of "fully heat treated"? The purpose of metal heat treatments in general is to achieve a certain degree of hardness or softness of a metal, and in some situations to create specific microstructural features in the material as well. If these objectives are achieved by, for example, an annealing treatment, then the material can be said to be "fully heat treated", i.e. no more heat treatment would be necessary or desirable. Clearly in some cases, for instance in the Ruhlman or Nakamura patents, materials which are annealed are subsequently friction stir welded. All of the heat treatment that one wished to apply to those materials had been done, i.e. the various portions of the material were at the proper degree of softness for the purpose of those patents.

As to the statement that it was known to spin in the annealed temper, this is consistent with what is recited in several of the instant claims (claims 6, 8, 13) and also as done by Shrayer, as set forth in the rejection supra. Applicant is apparently attempting to point out that one would spin in the annealed temper, but not friction stir weld in this temper. However, given the disclosures of Ruhlman or Nakamura, Applicant's position no longer appears to be supportable.

Art Unit: 1742

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Wyszomierski whose telephone number is (571) 272-1252. The examiner can normally be reached on Monday thru Friday from 8:00 a.m. to 4:30 p.m. Eastern time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on (571) 272-1244. All patent application related correspondence transmitted by facsimile must be directed to the new central facsimile number, (571)-273-8300. This new Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



GEORGE WYSZOMIERSKI  
PRIMARY EXAMINER  
GROUP 1700

GPW  
April 12, 2006